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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/855,905	05/14/97	YAMANAKA	M 443-17

IM62/0525

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EXAMINER	
KRUER,K	
ART UNIT	**PAPER NUMBER**
1773	17

DATE MAILED: 05/25/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
08/855,905	Yamanaka, Koyama, And Ueda
Examiner	**Group Art Unit**
Kevin Kruer	1773

☒ Responsive to communication(s) filed on *Apr 13, 2000*.

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) *1-20, 27, and 28* is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1-20, 27, and 28* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐approved ☐disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☒ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. Claims 1-20 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takashi et al. (Pat. No. 4,318,950) and further in view of European Patent 0 613 919 A1 (aka Ueda). Takashi teaches that it is well known in the art to make synthetic papers comprising oriented thermoplastic laminates. Furthermore, inorganic fillers are often added to the thermoplastic resin prior to stretching in order to roughen the surface and render the film receptive to pencil, pen, and crayon markings (col 1, lines 19-46). It is also well known in the art that antistatic properties are desired in synthetic paper products.

Takashi teaches that a composition comprising inorganic fillers and a propylene matrix (col 7, line 63) are useful in making synthetic paper. Inorganic filler comprises 0.5%-65wt% of the composition (col 7, lines 8-10) and may be selected from the group consisting of calcium carbonate, silica, talc, titanium oxide, and clay (col 7, lines 1-4). The composition may further comprise an anti-static agent (col 8, lines 20-60, and the examples). Such agents are commonly added to synthetic papers in order to make the film more ink receptive during printing. The polypropylene composition containing inorganic filler is uniaxially oriented at least 2.5 times the original dimension, and possibly as high as 16 times the original dimension (col 5, lines 8-17). It is well known in the art to orient the film at a temperature lower than the melting point of the polypropylene resin The film is stretch so that the void content is between 10-65% (claim 1; equation is in Table VII, col 17). The stretched film may be surface treated with corona discharge treatment at a voltage of 3,000 to 30,000 volts and a current of 0.5 to 5 amperes (col 4,

lines 41-51). The polypropylene composition may be laminated to a biaxially oriented backing film layer (abstract). The thickness of such a laminate may be 30-140um, wherein the claimed polypropylene composition has a thickness of 10-100um (Table IV, col 14). Furthermore, all the examples taught in Takashi have a gloss of 60% or less (see Tables VII (a) and VII(b)).

Takashi teaches the use of an anti-static agent in a synthetic paper polypropylene composition, but does not teach the claimed antistatic composition. However, Ueda teaches an antistatic which may be utilized in a polypropylene composition (page 9, lines 34-42). The composition taught in Ueda comprises:

component A: a polyolefin resin (55-95% by weight of the total composition)

component B: a polyetheresteramide antistatic agent (3-40% by weight)

component C: a polyamide resin (1-20% by weight), and

component D: a compatilizer (0.2-20%)

The polyetheresteramide is derived from a polyamide oligomer having a number average molecular weight of 300 to 3,000 and which contains carboxyl groups at each end and an alkylene oxide adduct of bisphenol having a number average molecular weight of from 300 to 5,000 (claim 1). For example, the polyetheresteramide can be synthesized from an ε-caprolactam, an ethylene oxide adduct of bisphenol A, and adipic acid (page 12, example 1). Furthermore, 12-aminodecanoic acid may be used as the polyamide oligomer in place of the ε-caprolactam (page 3, lines 21-29). Ueda teaches that polyetheresteramides having aromatic rings as component B have a reduced viscosity of from 0.5 to 4.0 in 0.5 wt% m-cresol solution at 25°C (page 4, lines 21-24). It would have been obvious to one of ordinary skill in the art to utilize the antistatic

agent taught in Ueda in the synthetic paper taught in Takashi because the polyetheresteramide is known to be compatible with polypropylene, heat resistance, maintains its antistatic properties permanently (abstract), and does not rinse away in the presence of water. Furthermore, it would have been obvious to utilize the polyetheresteramide in the amounts taught in Ueda because Ueda teaches that such amounts are sufficient for providing polypropylene matrixes with antistatic properties.

Ueda further teaches that the polyamide of component C increases the surface orientation of the polyetheresteramide (col 6, lines 38-47). The polyamide is selected from the group consisting of nylon 66, nylon 69, nylon 601, nylon 612, nylon 6, nylon 11, nylon 12, and nylon 46 (page 5, lines 21-22). Preferably the polyamide resin has a reduced viscosity of from 0.8 to 5 in 97% sulfuric acid (concentration 1g/100ml) at 30°C (page 5, lines 22-25). Thus, it would have been obvious to one of ordinary skill in the art to add the polyamide taught in Ueda in the taught amounts to the synthetic paper taught in Takashi because Ueda teaches that such polyamides (in the taught amounts) increase the surface orientation of the polyetheresteramide.

Ueda also teaches that a compatilizer is preferably utilized I in order to improve compatibility with the resin, prevent interlaminar peeling of molded articles obtained, and improve the mechanical strength and appearance of the final product (col 6, lines 55-61). When polypropylene is utilized as the thermoplastic matrix, preferred compatilizers include (a) an acid modified low molecular weight polyolefin having a number average molecular weight of from 800-25, 00 and an acid number of from 5-150, (b) a hydroxy modified low molecular weight polyolefin having a number average molecular weight of from 800 to 25,000 and a hydroxy value

of from 5 to 150, and c) an ester modified low molecular weight polyolefin obtained by partly or wholly esterifying an acid modified low molecular weight polyolefin with a polyoxyalkylene compound and having a number average molecular weight of from 1,000-28,000 (page 7, lines 21-29). Such a compatilizer may be obtained by reacting a low molecular weight polyolefin having a number average molecular weight from 700 to 20,000 with an unsaturated acid selected from methacrylic acid, maleic acid, maleic anhydride, fumaric acid, itaconic acid, itaconic anhydride, and citraconic anhydride (page 7, lines 30-39). The resulting product can be reacted further a) with an aliphatic amine selected from monomethanolamine, monoisopropanolamine, diethanolamine, and diisopropanolamine (page 7, lines 48-52), or b) by esterifying part or all of the carboxylic acid moieties of the modified low molecular weight polyolefin with a hydroxylated polyoxylalkylene compound (page 7, line 53 - page 8, line 9). The examiner takes the position that it would have been obvious to one of ordinary skill in the art to utilize the compatilizers taught in Ueda in their taught amounts in the synthetic paper taught in Takashi in order to improve compatibility with the resin, prevent interlaminar peeling of molded articles obtained, and improve the mechanical strength and appearance of the final product (col 6, lines 55-61).

2. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takashi et al. (Pat. No. 4,318,950) and further in view of European Patent 0 613 919 A1 (aka Ueda), as applied to claims 1-20 and 27, and further in view of Ohba et al. (Pat. No. 5,233,924). Takashi in view of Ueda is relied upon as above. Neither Takashi nor Ueda teaches the desired level of opacity of a synthetic paper. However, Ohba teaches a synthetic paper comprising a polyolefin matrix filled

with inorganic filler, wherein the opacity of the film is desirably at least 80% (abstract) because such an opaqueness is sufficient for writing with a pencil (col 1, lines 6-12).

Response to Arguments

3. Applicants' arguments filed April 3, 2000, have been fully considered but they are not persuasive.

Applicants argue that Ueda does not teach the claimed surface gloss (claim 1) or opaqueness. However, the rejection never relied upon Ueda for such a teaching. Rather, Takashi is the primary reference and is relied upon to teach the properties which are desirable in synthetic papers. All the examples of Takashi show that the surface gloss of the synthetic paper is below 60%. With respect to opaqueness, Takashi teaches that as filler concentrations increase, the opaqueness increases, which is desirable in synthetic papers (see Table VI).

Applicants further argue that Ueda does not teach that the composition may comprise the specific fillers claimed. However, the examiner would like to point out that Ueda was never relied upon for such a teaching. Rather, Takashi (aka the primary reference) was relied upon to teach the addition of filler to a propylene composition for the purpose of making synthetic paper.

Applicants further argue that Higuchi does not show that orientation of propylene decreases the sheet's surface resistivity. The examiner agrees with Applicants' assessment of the reference. However, the examiner maintains that Applicant is not comparing the claimed invention with the closest prior art. Applicants have shown that the surface resistance decreases when the sheet is oriented. Thus, Applicant states that the claimed film has been differentiated from Ueda. However, the examiner points out that Ueda is not the primary reference. If

Applicants desired to differentiate the claimed film from the prior art, the appropriate comparison would have been to a synthetic paper taught in Takashi which comprises an anti-static agent other than the claimed polyetheresteramide.

With regards to Applicants' attempted showing based upon comparative examples 2 and 3 in the specification, the examiner takes the position that those to examples cannot be properly compared because more than one variable is changed. In the instant case, the degree of orientation and the surface treatment of the film have been changed.

Conclusion

4. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin R. Kruer whose telephone number is (703) 305-0025. The examiner can normally be reached on Monday-Friday from 7:30a.m. to 4:30p.m.

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